UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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June 5, 2012

Colonel Jeffrey M. Hall
District Engineer
U.S. Army Corps of Engineers
Savannah District
100 West Oglethorpe Avenue
Savannah District, Georgia 31401-3640

ATTN: Mr. Bill Bailey, Chief of the Planning Division

SUBJ: **EPA Review of COE's "Savannah Harbor Expansion Project" (January 2012); Final Environmental Impact Statement (FEIS); Chatham County, Georgia and Jasper County, South Carolina; CEQ No. 20120103; ERP No. COE-E32083-00**

Dear Colonel Hall:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the subject U.S. Army Corps of Engineers (COE), Savannah District, Final Environmental Impact Statement (FEIS) for the Savannah Harbor Expansion Project (SHEP), dated January 2012, which we received on April 12, 2012. The project is proposed by the Georgia Ports Authority (GPA) of the Georgia Department of Transportation, the non-federal project sponsor (sponsor). EPA notes that this FEIS was developed to disclose the economic and environmental impacts associated with deepening the inner harbor and entrance (ocean bar) navigation channel to alternative incremental depths of up to -48 feet (ft) Mean Low Water (MLW), with an additional 2 ft allowable over depth dredging and 6 ft advance maintenance dredging (depending upon the location). EPA also notes that the COE has identified the 47-foot depth alternative as the National Economic Development (NED) Plan – "the plan that maximizes net economic benefits to the Nation and fully complies with Army policy." The responsible lead agency is the US Army Engineer District, Savannah, and the Cooperating Agencies are the Environmental Protection Agency (Region 4), the Department of Commerce (acting through the National Marine Fisheries Service), the Department of the Interior (acting through the US Fish and Wildlife Service).

The Savannah Harbor was last deepened in 1994 to -42 ft, and in 1999 the Water Resources Development Act (WRDA 1999) authorized the COE to dredge Savannah Harbor to a maximum depth of -48 ft ("Maximum Authorized Plan"), which is a -6 ft deepening of the existing conditions. WRDA 1999 requires that the authorized project may be carried out only after the Secretary of the Army, in consultation with affected Federal, State of Georgia,

State of South Carolina, regional, and local entities, reviews and approves an environmental impact statement (EIS) for the project that includes the following:

- an analysis of the impacts of project depth alternatives
- ranging from 42 feet through 48 feet; and
- a selected plan for navigation and an associated mitigation plan as required under section 906(a) of the Water Resources Development Act of 1986 (33 U.S.C. 2283(a));

WRDA 1999 also requires that the Secretary of the Interior, the Secretary of Commerce, the Administrator of the EPA, and the Secretary of the Army approve the selected plan and determine that the associated mitigation plan adequately addresses the potential environmental impacts of the project.

The NEPA process for SHEP has been extensive, and includes a number of earlier studies and technical reports. Initial NEPA efforts included the development by the Savannah District of a "Tier I" EIS (1998), which drew heavily upon a previous GPA feasibility study. While the Tier I EIS provided information analyzing the impacts of a proposed harbor deepening, it did not address all of the concerns and issues raised by the resource agencies. This led to the Savannah District initiating the development of the more detailed "Tier II" EIS and GRR (in early 2002), including the holding of public scoping meetings. Approximately ten years of technical field studies, economic and environmental modeling, and scientific and engineering analyses have been conducted since 2002 as part of the Tier II EIS process, involving the study of water quality (including dissolved oxygen and salinity), wetlands and aquatic ecosystems, sediments, fisheries, drinking water supplies, cultural and archeological resources, hydrology, hydraulics, air quality and other important factors affected by the proposed harbor deepening. As part of the EIS process, numerous detailed studies (over 40 different reports including many computer models) have been developed. EPA has also participated in many of the different types of stakeholder and collaborative EIS development team meetings that have occurred during this 10 year period. Some of these groups have held numerous meetings, such as the Stakeholders Evaluation Group (the "SEG").

The FEIS has been developed from response to comments received on the DEIS, including comments from EPA and the other Cooperating Agencies, as well as the public review, the COE Headquarters Policy Review, the COE Agency Technical Review, and an Independent External Peer Review by the Battelle Memorial Institute. EPA notes the following changes between the DEIS and the FEIS, many of which relate to issues raised in response to previous comments from EPA and the other Cooperating Agencies.

- Incorporating a larger fish passage design at the New Savannah Bluff Lock and Dam near Augusta, Georgia, as mitigation for impacts to habitat of the endangered Shortnose sturgeon.
- Removal from the project of the construction of an underwater sill in the Lower Middle River.
- Increasing Post-Construction Monitoring from 5 to 10 years for several elements.
- Adding two Speece cones to the Dissolved Oxygen Injection System.

- Completing an additional evaluation of chloride impacts on the City of Savannah's Abercorn Creek intake and adding mitigation for those impacts.
- Removing nearshore placement of new work dredged sediments near Tybee Island, Georgia from the project.
- Adding real estate to address additional fish passage and chloride mitigation needs.
- Increasing construction management costs to address additional fish passage and chloride mitigation needs.
- Increasing the amount of Planning, Engineering and Design costs across all project features and to address additional fish passage and chloride mitigation needs.
- Updating costs from October 2010 to October 2011 price levels.
- The economic analysis in the draft report depended on data and information from vessel operations and forecasts up through 2007 and 2008. The FEIS incorporates vessel operations information and forecasts available through 2010. Key elements incorporated include establishing a new baseline for forecasting commodity flow and traffic, updating the world fleet and Savannah vessel call information, including vessel operating costs, and inclusion of Post-Panamax Generation 2 vessels in the "without-project" condition.
- Changes made to the Final GRR and DEIS that did not affect project costs or benefits include updating the air quality evaluation, incorporating the conditions from the National Marine Fisheries Service Final Biological Opinion, conducting additional dissolved oxygen modeling in shallow areas, and documenting interagency coordination from November 2010 to the present.

The following summarizes EPA's major technical areas of concern and summarizes EPA's remaining comments on the FEIS. Additional suggestions and recommendations are provided for implementation of the project in an environmentally protective and sustainable manner.

EPA's FEIS Comments and Recommendations

1. Water Quality, Dissolved Oxygen (DO), and Modeling Issues

The Harbor is impaired for dissolved oxygen due to historical deepening projects and a large number of dischargers of biological oxygen demanding substances into the Harbor, which cause the dissolved oxygen levels in the Harbor to drop to very low levels in the summer months. As part of the NEPA process, the COE has intensively investigated measures to address additional impacts to dissolved oxygen levels in the harbor that will result from the proposed additional harbor deepening. Based on the existing dissolved oxygen impairment, EPA developed and finalized a Total Maximum Daily Load (TMDL) based on Georgia's then-applicable water quality standard (WQS) for dissolved oxygen in 2006. The TMDL requires a "zero discharge" of biological oxygen demanding substances into and upstream of the Harbor. In April 2010, Georgia revised their WQS for dissolved oxygen to be consistent with South Carolina's approved WQS. Since that time, EPA has been working closely with Georgia and South Carolina to develop a new TMDL consistent with the revised WQS. As reflected in a revised draft TMDL issued by EPA for public comment in May 2010, Georgia's new WQS will allow for some loadings of oxygen demanding

substances into the harbor, but the existing harbor dischargers will still be required to considerably reduce their existing permitted loads. EPA is continuing to work with South Carolina and Georgia to determine the best approach to revise the 2006 TMDL and address the continued impairment of the new WQS. The findings of studies conducted for the Savannah Harbor Ecosystem Restoration Study were incorporated into analysis of the harbor deepening project, which included examining 25 different methods of improving DO levels in Savannah Harbor.

After significant engineering analysis, computer modeling, and a full scale demonstration project, the COE, in collaboration with EPA, the states, and other federal agencies, has concluded that oxygen injection, using "Speece Cones" with supporting equipment, is the most cost-effective method for raising DO levels in the harbor during the summer months. The COE has proposed placing these oxygen injection systems on the land at up to four locations. Given that the additional deepening of the Harbor will create a permanent additional impact to dissolved oxygen levels in the Harbor, EPA has requested strong financial assurances to ensure the operation of these systems throughout the life of the project (identified in the FEIS as 50 years).

In response to EPA's comments on the issue of funding of operation and maintenance of speece cones for the life of the project, COE stated that it agreed to operate and maintain the mitigation features as described in the FEIS throughout the project's life. For example, as part of the conditions placed upon the project by SCDHEC through the State's Section 401 Certification, dated November 15, 2011, the GPA has agreed to provide financial assurance in the event that federal funding for the oxygenation system is insufficient in any year. Specifically, South Carolina's 401 Certification provides that "[t]he GPA will provide financial assurance, in a manner acceptable to DHEC, that it will fund operation and maintenance of the Dissolved Oxygen system in any year that sufficient federal funds for the operation and maintenance of the system are not made available. This obligation extends for the life of the project (50 years). Such financial assurance may be achieved through a Standby Trust Fund, Surety Bond, Letter of Credit, Insurance, or other means deemed acceptable to DHEC. The GPA will provide the financial assurance before any dredging begins. For purposes of the COE, this offer and commitment by GPA to provide financial assurance does not constitute an item of local cooperation or cost-shared feature." This level of financial assurance provides greater certainty that operations and maintenance costs will be covered through the life of the project.

2. Aquatic Issues

For the 47-ft deepening alternative supported by the sponsor, direct impacts to wetlands include 15.68 acres of brackish marsh wetlands by excavation and 223 acres of indirect impacts to freshwater wetlands due to salinity changes (as noted in the FEIS Appendix C). To mitigate for the direct impacts, the Savannah District's Standard Operating Procedure for Compensatory Mitigation (SOP) indicated that approximately 28.8 acres of restored saltmarsh would be required. The Corps intends to restore approximately 40.3 acres of brackish marsh at Disposal Area 1S, which is located within the boundaries of the Savannah National Wildlife Refuge (SNWR). The Savannah District proposes to mitigate the

indirect impacts through the preservation of 2,245 acres of wetlands (consisting of bottom land hardwoods and upland buffer in SNWR).

EPA's primary concerns expressed in our DEIS comments were related to the District's proposed mitigation approach (use of the Savannah District Mitigation SOP), the adequacy of the mitigation, and the proposed mitigation monitoring and adaptive management plans. In response to concerns expressed by EPA over the use of the SOP for large scale projects, the Savannah District conducted consultations with the COE's Center of Expertise for Ecosystem Restoration (Center) to analyze the use of the SOP as an appropriate method of determining the amount of acres that would need to acquire and preserve in order to compensate for adverse impacts to wetlands from SHEP. In response to concerns expressed regarding the adequacy of the mitigation proposed, the Savannah District provided an analysis (Consideration of USEPA/USACE Final Mitigation Rule) and determined that the mitigation-to-impacts ratio to be approximately 10:1 which would be consistent with the 2008 Mitigation Rule. The District also points out that these wetlands would still provide some of the ecological functions associated with emergent wetland systems. The Savannah District acknowledged that there was uncertainty about the degree to which conversion will ultimately occur, pointing to the need for monitoring and adaptive management for this project. Therefore the District provided a monitoring and adaptive management plan in the FEIS (Appendix D). EPA also believes that the development of a monitoring and adaptive management plan is an important step in satisfying our concerns outlined in our DEIS comments regarding wetland and water quality mitigation. To ensure that the adaptive management and monitoring plan is fully implemented, EPA supports the establishment of an Interagency Adaptive Management Team. EPA also recommends specific time frames for receiving and reviewing monitoring data, and developing an implementation strategy to be carried out by the COE in the event adaptive management actions are required.

In summary, while EPA expressed concerns in our comment letter on the DEIS concerning the COE's wetlands analysis and overall proposed mitigation plan, our concerns with the planned mitigation are addressed when considered in association with monitoring and adaptive management to address the uncertainty over conversion. Due to the unique nature of SHEP's impacts (potential vegetative conversion), and the uncertainty associated with the mitigation, the COE has developed an extensive monitoring program to quantify the magnitude of the marsh conversion that does occur. If impacts to tidal freshwater marsh exceed those expected, funds would be made available to purchase additional lands for preservation as noted in the Monitoring and Adaptive Management Plan.

3. Section 103 (Sediment) Issues

The FEIS includes information related to the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA, also known as the Ocean Dumping Act or ODA). MPRSA governs disposal of dredged material in ocean waters along with EPA's regulations and criteria established at 40 CFR Parts 220-229. If determined to meet EPA's Ocean Dumping Criteria, the FEIS proposes disposal of sediments dredged from Stations +4+000 to -97+680B into the Savannah Ocean Dredged Material Disposal Site (ODMDS). The COE proposes that the ODMDS receive both new work and maintenance sediments from the entrance channel,

and the COE is currently working with EPA on remaining Section 103 issues, including a determination as to whether the sediments meet EPA's Ocean Dumping Criteria for placement into the Savannah ODMDS. It is EPA's position that the proposed dredged material does not meet any of the exclusionary criteria and therefore must undergo testing and evaluation in accordance with the 40 CFR Parts 220-229. Samples of bottom sediments from the excavation area in the existing entrance channel have recently been tested to evaluate contaminants which may be present in new work sediment materials. Additional sampling and testing (bioaccumulation studies) for the existing channel and extension of the harbor entrance channel have been completed to evaluate whether the new work material complies with the Ocean Dumping Criteria and is suitable for placement in the Savannah ODMDS. The results of these analyses were used to prepare a Section 103 Evaluation for SHEP, which the COE provided to EPA Region 4 on May 25, 2012, accompanied by a request that EPA concurs with the COE's determination regarding the suitable disposal of the dredging sediments from Stations +4+000 to -97+680B.

4. Air Emissions Inventory and Air Toxics Issues

As part of the NEPA process for evaluating the potential environmental impacts resulting from SHEP, the Savannah District completed an air quality analysis in 2006 and a more detailed assessment in 2010. The 2006 report described the air emissions associated with container vessels that were utilizing GPA's Garden City and Ocean Terminals in Savannah Harbor. Emission estimates for those operations were presented in the report for the period 2004 through 2050, both with and without implementation of the proposed harbor deepening project. The 2010 assessment expanded the Corps 2006 air quality analysis to the entire harbor to more completely assess air quality impacts from the proposed harbor deepening. This more detailed assessment evaluated the air emissions from all cargo-carrying vessels and landside cargo handling equipment at both the GPA and privately-operated terminals at the port. In accordance with the requirements of NEPA, it also compared emissions for both the "with" and "without project" (No Action) alternatives.

In addition to EPA's recommended criteria pollutants, estimates of "air toxics" emitted at the port were also calculated. In the 2006 and 2010 studies, port related annualized emissions were estimated for current and future years, and in with respect to future years, compared with asynchronous estimated annualized emissions in Chatham County as a whole. And while the 2010 report was expanded in scope and more detailed in nature than the 2006 report, EPA noted that it was prepared using a "mid tier" approach to an emissions inventory in which average vessel, vehicle, and other equipment characteristics and usage were used to compile the inventory. To address EPA's remaining concerns regarding an effective emissions inventory for SHEP and to supplement the 2006 and 2010 studies, GPA commissioned (2011) and is currently funding the Georgia Institute of Technology (Georgia Tech) to conduct a $250,000 follow-up study to the FEIS known as "Detailed Criteria and Hazardous Air Pollutant Emission Inventories for the Ports of Savannah and the Savannah Metropolitan Area." EPA still prefers that this emission inventory be used to conduct a screening level air toxic assessment consistent with our previous comments.

EPA also notes that there may be specific air quality improvement strategies that although they may not be cost effective at present, merit consideration by GPA in the future. EPA recommends that the following Special Conditions be included in the SHEP ROD to facilitate a more environmentally sustainable project:

- When electrifying Ship-to-Shore (STS) gantry cranes, GPA should ensure that the power supply and related hardware is adequate to install shore power at a future date if warranted by the dwell time of the vessels.
- GPA should work to provide non-monetary incentives to the drayage truck fleet that is part of the "SmartWay" Drayage program.
- GPA should work with companies when designing the distribution center to ensure that idling is minimized through installation of shore power, signage, and/or providing a designated room for drivers, so the drivers can wait in this room while waiting to pick up containers, rather than idling in their trucks.

Finally, as an outgrowth of the studies completed by the COE and the work underway by GPA, EPA Region 4, in collaboration with the EPA Office of Research and Development (including both the National Risk Management Laboratory and the National Exposure Research Laboratory), is currently developing several collaborative research projects that are very relevant to SHEP, with a goal of ultimately developing strategies for improving air quality for sensitive populations near the port. The projects being considered include an evaluation of local-scale air quality impacts from port-related emissions, as well as implementing a low cost, continuous measurement of air pollution in local environmental justice (EJ) communities around the port.

5. Community Outreach Issues

As required under NEPA, over the last 15 years the COE has made substantial efforts both to inform the public as well as receive public comments, while working closely with the SEG, local communities, and State and Federal resource agencies regarding many complex issues associated with the proposed harbor deepening. EPA notes that these efforts have incorporated the use of the latest technology and social media, including use of large E-mail distribution lists, Twitter messaging, Youtube videos, a website dedicated to the project, and PowerPoint presentations and reports available on the web for download. As previously mentioned in this letter, since 1999 the Corps has met with the SEG approximately 70 times to discuss SHEP. In addition to the NEPA required public scoping meeting on February 21, 2002 and the scoping meeting on April 12, 2002, a number of other meetings with the public and agencies have discussed critical project issues including "salinity, Dissolved Oxygen (DO) levels, conversion of freshwater to brackish marsh, nekton, benthos, contaminated sediments, economics, and other impacts related to the proposed harbor deepening." EPA notes that a NEPA public information meeting was held 30 days after release of the DEIS to provide opportunity for public and agency input.

EPA FEIS Conclusions

EPA notes that the FEIS substantially addresses most of our technical concerns over SHEP's impacts and provides important additional information that we requested, including a recommendation that an interagency team be created to work with the COE and GPA. Therefore, EPA requests that the COE address these following issues and comments, and document the results in the ROD:

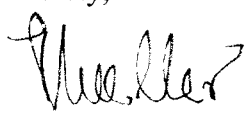
- **Monitoring:** Pre-Construction Monitoring should be used to establish the baseline data bank for the Savannah Harbor estuary to assist with impact assessment during the Construction Monitoring and Post-Construction Monitoring phases of the project. The Monitoring should establish ranges of acceptable performance parameters for the Savannah Harbor estuary.
- **Adaptive Management:** This program should have three components, each with their own goal. The first component should consist of evaluating the accuracy of the predicted environmental impacts. The corresponding goal is to improve the predictive capability of the models used to identify and quantify project-induced impacts. The second component should consist of assessing the effectiveness of the mitigation features. The final component should include modifying the project as needed to ensure the levels of environmental effects predicted in the EIS are not exceeded.
- **Financial Assurance:** The adequacy of the financial assurance to ensure continued operation of the oxygenation system throughout the life of the project is critical to protecting the water quality of the Harbor, and ensuring that the additional deepening does not further contribute to the ongoing dissolved oxygen impairment. EPA wants to ensure that appropriate documentation of the financial assurance being put forth on the project is available from all related entities. EPA also requests a role in the review and approval of the adequacy of the specific financial assurance mechanism(s) proposed by GPA prior to the initiation of any dredging.
- **Completion of the 103 Process:** EPA will review the submitted Section 103 Evaluation for completeness, conduct an evaluation of the results and make an independent determination of compliance with the Ocean Dumping Criteria. Additionally, the required Site Management and Monitoring Plan for the Savannah ODMDS must be completed and signed by EPA and COE before EPA can issue a concurrence for disposal of material from the SHEP into the Savannah ODMDS. Any portions of this material that fail to meet the Ocean Dumping Criteria must be placed within an upland Confined Disposal Facility (CDF) that has sufficient capacity for the volume of proposed dredged material that fails to meet the Ocean Dumping Criteria.
- **Air Issues:** EPA appreciates GPA commissioning the current Georgia Tech study, which builds upon the previous air quality impact assessments by developing a detailed spatial, temporal, and chemically speciated emission inventory for the Savannah Harbor, including all activities related to GPA's Garden City and Ocean Terminals, and the other privately-owned terminals in the Port of Savannah. Additionally, contemporaneous inventories are also being developed for the Savannah metro area so that harbor emissions may be more readily and directly evaluated in the larger air quality context. EPA recommends that the current air study being conducted by Georgia Tech continue as a way to build upon the previous studies and provide a

basis for understanding the Savannah Harbor emissions within the context of the larger metro area.

- **Environmental Justice:** The FEIS indicates that no significant adverse impacts to communities with EJ concerns are anticipated with the port expansion project and ongoing port activities. EPA's recommended strategies include the formation of a formal community advisory group (CAG) with neighboring communities that meets periodically to identify and address community concerns or recommendations that may arise associated with ongoing port activities. To assure community residents living in close proximity to port and transportation corridor that the port's future growth and expansion efforts will not result in substantive localized impacts (i.e., air, traffic), a monitoring program should also be established. Finally, EPA recommends that GPA develop strategies to support or establish local jobs training programs that are targeted at communities with EJ concerns, with a goal of creating opportunities for residents living in close proximity to the port to effectively compete for future port-related employment.

EPA appreciates the opportunity to review the FEIS and the extensive opportunities for collaboration with the COE. We also appreciate the ability to work closely with the USFWS, NMFS, GADNR, SCDNR, SCDHEC, and many other stakeholders and community organizations in order to develop innovative environmental solutions for a range of SHEP issues. Should you have questions regarding our comments or would like to discuss our sustainability recommendations, please contact me at 404-562-9611 or mueller.heinz@epa.gov.

Sincerely,



Heinz J. Mueller, Chief
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